

A semiconductor memory element is disclosed which can share the terminals easily among a plurality of memory elements and can pass a high current and which is strong against the noises. In order to accomplish this a control electrode is formed to cover the entirety of thin film regions connecting low-resistance regions. As a result, the element can have a small size and can store information with high density. Thus, a highly integrated, low power consumption non-volatile memory device can be realized with reduced size.